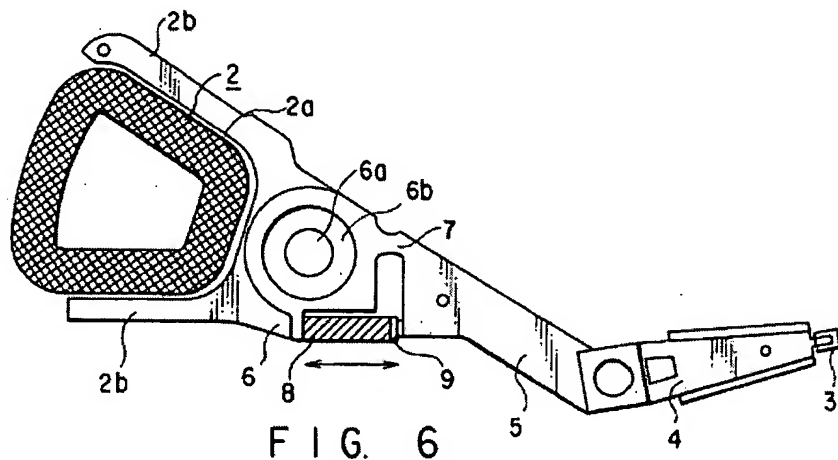


REMARKS

Claims 1-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al. (U.S. Patent No. 6,034,834) in view of Imada et al. (U.S. Patent No. 6,268,983). Claim 1 has been amended to overcome this rejection. Applicants traverse this rejection because neither Yoshikawa et al. nor Imada et al. disclose or suggest a microactuator arm directly coupled to the front end of a main actuator arm, as in amended claim 1.

Yoshikawa et al. disclose a head actuator having an actuator body 6 and merely one arm, support arm 5 (FIG. 6). A piezoelectric element 8 is provided on the support arm 5 in the vicinity of the fixed end, adjacent the rotating shaft 6a, and is not directly coupled to the front end of the main actuator arm, as in the present invention.



Imada et al. disclose a support arm 1, and a suspension arm 2 with a head 3 disposed at the end of the suspension arm. Piezoelectric elements 6a and 6b have one end fixed to the support arm 1, and the other end fixed to the suspension arm 2. In this configuration, the piezoelectric elements 6a and 6b form a bridge structure (See FIG. 1)

between the support arm and the suspension arm. The microactuator arm 2 is not directly coupled to the front end of the suspension arm 1.

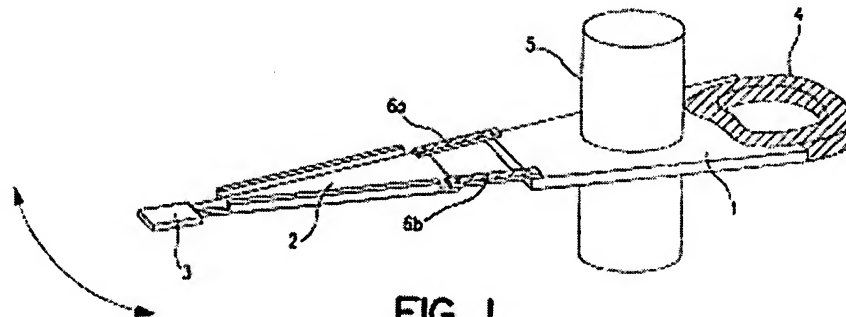
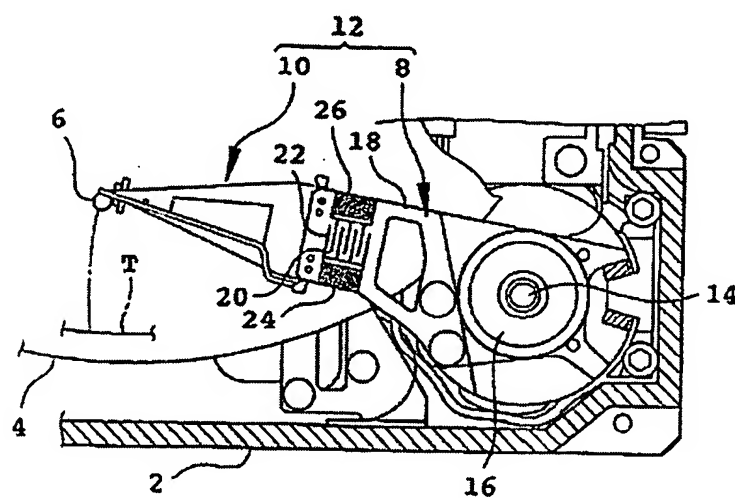


FIG. 1

In contrast, the present invention has a main actuator arm 8 having at least one piezoelectric element 24, 26 directly coupled to a front (free) end of the main actuator arm. The piezoelectric element 24, 26 has two ends along the length of the element, each end being disposed on the main actuator arm. The piezoelectric element 24, 26 does not bridge the actuator arm 8 and the arm 10, as in Imada et al. Also, a narrow portion 20 having slits 22 is located between the elements 24, 26.



In other words, Yoshikawa et al. merely disclose a piezoelectric element on the back end of the arm, not the front end (as in the present invention). Further, Imada et al. merely disclose a piezoelectric element which bridges two different arms, not an element which has two ends along its length that are both disposed on the same arm (as in the present invention). Neither reference discloses a piezoelectric element on the front end of the major arm where the microactuator arm is directly coupled to the front end of the main arm, as seen in the above Figure.

Even the combination of these references would not produce a device having a piezoelectric element on the front end of the main actuator arm where the microactuator arm is directly coupled to the main arm. Combining the references would merely produce a piezoelectric element 6a, 6b (of Imada et al.) which bridges the back (fixed) end of the support arm 5 (of Yoshikawa) with the actuator body 6 (of Yoshikawa et al). Since a combination of the two references does not produce the claimed invention, this is strong evidence of non-obviousness. Withdrawal of this rejection is respectfully requested.

New claim 8 is depends from claim 1, and is allowable for the reasons given with respect to claim 1.

New independent claims 9 and 17, and the claims that depend therefrom, have been added. Applicants submit that no new matter has been added. Support is found in FIG. 1, as well as the specification in the paragraph beginning on page 11, line 15, and ending on page 12, line 13, which states in part:

“A narrow portion 20 is formed in the vicinity of the front end of the actuator arm 18. The narrow portion 20 is formed with a plurality of slits 22. The slits 22 are interdigitally arranged so as to alternately extend from the opposite side edges of the narrow portion 20. A pair of multilayer piezoelectric elements 24, 26 are provided on the opposite sides of the narrow portion 20. When a voltage is applied to the element 24 in a direction of expansion of the element 24, a voltage is applied to the element 26 in a direction of expansion of the element 26. Accordingly, the narrow portion 20 is finely oscillated by such a push-pull operation of the elements 24, 26, and the microactuator 10 can therefore be driven so as to swing about a fulcrum existing in the vicinity of the front end of the main actuator 8.”

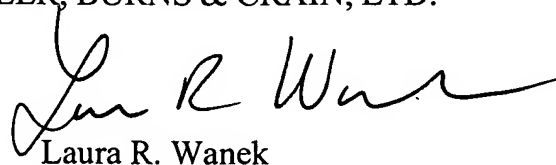
Applicants submit that new claims 9-21 are patentably distinct over the art of record. Allowance of the same is requested.

The above amendments to the claims, in view of the foregoing remarks, are believed to place the present application in condition for allowance. Allowance of the application is earnestly solicited. The Examiner should call Applicant's attorney if an interview would expedite prosecution.

Respectfully submitted,

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By



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